# Specifications




**Photo is representative**





## Eaton 111895

Eaton Moeller series Power Defense - Molded Case Circuit Breaker. Circuit-breaker LZM, 3 p, 100A, C1-A100-I

### General specifications

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|---|---|
| **PRODUCT NAME** | Eaton Moeller series Power Defense molded case circuit-breaker |
| **CATALOG NUMBER** | 111895 |
| **MODEL CODE** | LZMC1-A100-I |
| **EAN** | 4015081114436 |
| **PRODUCT LENGTH/DEPTH** | 88 mm |
| **PRODUCT HEIGHT** | 145 mm |
| **PRODUCT WIDTH** | 90 mm |
| **PRODUCT WEIGHT** | 1.014 kg |
| **COMPLIANCES** | RoHS conform |
| **CERTIFICATIONS** | IEC/EN 60947<br>IEC<br>VDE 0660 |

## Additional information

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| **FUNCTIONS** | System and cable protection |

## Delivery program

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| **AMPERAGE RATING** | 100 A |
| **APPLICATION** | Use in unearthed supply systems at 690 V |
| **CIRCUIT BREAKER FRAME TYPE** | LZM1 |
| **FEATURES** | Protection unit |
| **NUMBER OF POLES** | Three-pole |
| **RELEASE SYSTEM** | Thermomagnetic release |
| **SPECIAL FEATURES** | • Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity Icn)<br>• Rated current = rated uninterrupted current: 100 A |
| **TYPE** | Circuit breaker |

## Design verification as per IEC/EN 61439

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| **10.10 TEMPERATURE RISE** | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| **10.11 SHORT-CIRCUIT RATING** | Is the panel builder's responsibility. The specifications for the switchgear must be observed. |
| **10.12 ELECTROMAGNETIC COMPATIBILITY** | Is the panel builder's responsibility. The specifications for the switchgear must be observed. |
| **10.13 MECHANICAL FUNCTION** | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. |
| **10.2.2 CORROSION RESISTANCE** | Meets the product standard's requirements. |
| **10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES** | Meets the product standard's requirements. |
| **10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT** | Meets the product standard's requirements. |
| **10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS** | Meets the product standard's requirements. |
| **10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION** | Meets the product standard's requirements. |
| **10.2.5 LIFTING** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.2.6 MECHANICAL IMPACT** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.2.7 INSCRIPTIONS** | Meets the product standard's requirements. |
| **10.3 DEGREE OF PROTECTION OF ASSEMBLIES** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.4 CLEARANCES AND CREEPAGE DISTANCES** | Meets the product standard's requirements. |
| **10.5 PROTECTION AGAINST ELECTRIC SHOCK** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS** | Is the panel builder's responsibility. |
| **10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS** | Is the panel builder's responsibility. |

## Design verification as per IEC/EN 61439 - technical data

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| **EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT** | 21.9 W |
| **RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)** | 100 A |

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| **10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH** | Is the panel builder's responsibility. |
| **10.9.3 IMPULSE WITHSTAND VOLTAGE** | Is the panel builder's responsibility. |
| **10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL** | Is the panel builder's responsibility. |

## Technical data - electrical

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| **AMPERAGE RATING** | 100 A |
| **DIRECTION OF INCOMING SUPPLY** | As required |
| **ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT** | Frame clamp |
| **HANDLE TYPE** | Rocker lever |
| **INSTANTANEOUS CURRENT SETTING (II) - MAX** | 1000 A |
| **INSTANTANEOUS CURRENT SETTING (II) - MIN** | 600 A |
| **ISOLATION** | 300 V AC (between the auxiliary contacts)<br>500 V AC (between auxiliary contacts and main contacts) |
| **LIFESPAN, ELECTRICAL** | 10000 operations at 400 V AC-1<br>5000 operations at 690 V AC-3<br>7500 operations at 415 V AC-3<br>10000 operations at 415 V AC-1<br>7500 operations at 690 V AC-1 |
| **NUMBER OF OPERATIONS PER HOUR - MAX** | 120 |
| **OVERLOAD CURRENT SETTING (IR) - MAX** | 100 A |
| **OVERLOAD CURRENT SETTING (IR) - MIN** | 80 A |
| **OVERVOLTAGE CATEGORY** | III |
| **POLLUTION DEGREE** | 3 |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS** | 6000 V |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS** | 6000 V |
| **RATED INSULATION VOLTAGE (UI)** | 690 V AC |
| **RATED OPERATIONAL CURRENT** | 100 A (415 V AC-3, making and breaking capacity)<br>160 A (690 V AC-1, making and breaking capacity)<br>100 A (660-690 V AC-3, making and breaking capacity)<br>160 A (380/400 V AC-1, making and breaking capacity)<br>125 A (415 V AC-1, making and breaking capacity) |
| **RATED SHORT-CIRCUIT** | 55 kA |

## Technical data - mechanical

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| **CLIMATIC PROOFING** | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78 |
| **DEGREE OF PROTECTION** | In the area of the HMI devices: IP20 (basic protection type)<br>IP20 |
| **DEGREE OF PROTECTION (IP), FRONT SIDE** | IP66 (with door coupling rotary handle)<br>IP40 (with insulating surround) |
| **DEGREE OF PROTECTION (TERMINATIONS)** | IP00 (terminations, phase isolator and band terminal)<br>IP10 (tunnel terminal) |
| **LIFESPAN, MECHANICAL** | 20000 operations |
| **MOUNTING METHOD** | Built-in device fixed built-in technique<br>DIN rail (top hat rail) mounting optional<br>Fixed |
| **NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)** | 0 |
| **NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)** | 0 |
| **NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)** | 0 |
| **POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT** | Front side |
| **PROTECTION AGAINST DIRECT CONTACT** | Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110 |
| **SHOCK RESISTANCE** | 20 g (half-sinusoidal shock 20 ms) |
| **SPECIAL FEATURES** | • Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity Icn)<br>• Rated current = rated uninterrupted current: 100 A |

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| **BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ** | |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ** | 36 kA |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ** | 22.5 kA |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ** | 6 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ** | 121 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ** | 76 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ** | 63 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ** | 24 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ** | 14 kA |
| **SHORT DELAY CURRENT SETTING (ISD) - MAX** | 0 A |
| **SHORT DELAY CURRENT SETTING (ISD) - MIN** | 0 A |
| **SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX** | 1000 A |
| **SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN** | 600 A |
| **SHORT-CIRCUIT TOTAL BREAKTIME** | < 10 ms |
| **UTILIZATION CATEGORY** | A (IEC/EN 60947-2) |
| **VOLTAGE RATING** | 690 V - 690 V |

## Technical data - mechanical - terminals

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| **STANDARD TERMINALS** | Box terminal |
| **TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)** | 16 mm² (1x) at tunnel terminal |
| **TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)** | 25 mm² - 95 mm² (1x) at tunnel terminal |
| **TERMINAL CAPACITY (CONTROL CABLE)** | 0.75 mm² - 2.5 mm² (1x)<br>0.75 mm² - 1.5 mm² (2x) |
| **TERMINAL CAPACITY (COPPER BUSBAR)** | Max. 16 mm x 5 mm direct at switch rear-side connection<br>M8 at rear-side screw connection<br>Min. 12 mm x 5 mm direct at switch rear-side connection |
| **TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)** | 10 mm² - 16 mm² (1x) at box terminal<br>6 mm² - 16 mm² (2x) direct at switch rear-side connection<br>6 mm² - 16 mm² (2x) at box terminal<br>10 mm² - 16 mm² (1x) direct at switch rear-side connection<br>16 mm² - 95 mm² (1x) at tunnel terminal |
| **TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)** | 25 mm² (2x) direct at switch rear-side connection<br>25 mm² - 95 mm² (1x) at tunnel terminal<br>25 mm² (2x) at box terminal<br>25 mm² - 70 mm² (1x) direct at switch rear-side connection<br>25 mm² - 70 mm² (1x) at box terminal |
| **TERMINAL CAPACITY (COPPER STRIP)** | Min. 2 segments of 9 mm x 0.8 mm at box terminal<br>Max. 9 segments of 9 mm x 0.8 mm at box terminal |

## Resources

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| **CHARACTERISTIC CURVE** | eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-039.eps<br>eaton-circuit-breaker-nzm-mccb-characteristic-curve-051.eps<br>eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-033.eps |
| **DECLARATIONS OF CONFORMITY** | eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250118en.pdf |
| **DRAWINGS** | eaton-circuit-breaker-nzm-mccb-dimensions-017.eps<br>eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps<br>eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-006.eps |
| **INSTALLATION INSTRUCTIONS** | eaton-circuit-breaker-basic-unit-lzm1-instruction-leaflet-il01203007z.pdf |
| **INSTALLATION VIDEOS** | Power Defense EMEA |

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| **PROJECT NAME:** | |
| **PROJECT NUMBER:** | |
| **PREPARED BY:** | |
| **DATE:** | |

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